The Implications of "Unmoored" Young Men: Youth Bulges and Protests in an African Context

Research Thesis

Presented in partial fulfillment of the requirements for graduation *with honors research distinction* in International Studies in the College of Arts and Sciences of The Ohio State University

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Abstract

Much research has considered the effects of the presence of large youth populations in various areas on conflict. The literature lacks a clear verdict, although some have suggested the existence of a significant link between youth bulges and political violence. My research seeks to examine the connection between the presence of large populations of people between the ages of 15 and 24 and protest activity. Unlike previous studies, the scope of this project is limited to the experience of Sub-Saharan Africa, and the youth bulge is tabulated differently. The data for this research was collected from various databases of relevant indicators. I utilize a fixed-effects regression model that allows for an examination of the change of the relationship between age and protests in the region over a 25-year period. Controlling for several variables, I find a small, but significant effect of the youth bulge on protests. The study also posits that certain societal conditions, such as the prevalence of polygamous marriages, tend to strengthen the relationship by offering young men few alternatives to conflict. I look at two countries, Nigeria and Tanzania, and determine that sub-national data also support the notion that the practice of polygamy fortifies the observed relationship.

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Introduction

For the majority of human history, the life of the average person can only be described as nasty, brutish, and short. As a result of numerous factors, including high infant mortality rates and the threat posed by infectious diseases across the lifespan, life expectancy was low in early human societies. According to the *Encyclopædia Britannica*, human life expectancy during the Bronze Age was about 26 at birth; even in the late medieval English peerage, life expectancies of 30 at birth and 43 at age 21 were observed. Likewise, human pre-industrial societies were also characterized by the presence of very high birth rates. The economic demand for children in an agriculture-intensive society, coupled with a lack of contraceptive methods, meant that women could expect to bear as many as 7 or 8 children, on average, over the course of their lifespans.

The practical effect of these coexisting realities, in both pre-industrial Western societies and in present-day countries still in the early stages of their demographic transition, is that the median age of the population is very low. In modern Niger, for instance, half the country is younger than 15, and this same reality is replicated across the African continent. Contrast this with the situation in Japan, where one of the world's highest life expectancies is coupled with one of its lowest fertility rates; this is in turn joined with the legacy of the country's extremely short post-World War II baby boom to create a populace with a median age of nearly 47. In aggregate, societies' demographic profiles change and evolve over time, and this constant evolution has myriad implications for societal stability, unrest, and upheaval.

When a country is discovered to have a large population of young people, it is often said that that nation exhibits a so-called "youth bulge." Often used with a sense of alarm by laypeople and scholars alike, this term accurately describes the situation on the ground in many nations around the world, including most countries in Sub-Saharan Africa. The concerns arising from

large populations of young people have their roots in a belief that young people between the ages of 15 and 24, and especially young men, are the most likely sector of a nation's populace to engage in political violence. According to scholarship within the field of evolutionary psychology, times in which these young men are particularly "unmoored" from society's institutions, either due to lack of marriage, education, or employment prospects, are associated with an increase in the risk of conflict.

Understanding the relationship between youth bulges and political violence is perhaps most crucial in the context of Sub-Saharan Africa, where very large youth populations coexist with frequent protest events and other forms of civil conflict. While it is clear that teenage boys and young adult men play a particularly outsized and crucial role in these events, less well-known is whether or not their very presence ushers in the societal norms and realities that allow conflict to occur.

In this paper, I shall attempt to at least partially answer this question. This line of inquiry is one that comes with a host of policy implications. If a strong relationship can be established between the relative size of a given state's youth cohort and protest activity in that country, then the importance of furnishing effective birth control and sex education will only become more readily apparent. The possibility that these individuals' psychosocial angst could be actively redirected into post-secondary education and employment opportunities would have to be more thoroughly analyzed. Gender imbalances in marriage arising out of polygamous unions and sex-selective abortions that result in "missing women" would have to be more robustly interrogated and possible solutions would have to be appropriately explored.

I begin by providing an overview of the recent relevant literature regarding population demography, civil war, protest, and male alienation. I then discuss the methods that I employ in

my study. The data for this research was collected from myriad databases of social conflict, population dynamics, and national economic and political indicators. I employ a fixed-effects regression model that allows for an examination of the change of the relationship between age and protests in most countries in Sub-Saharan Africa over a 25-year period. Controlling for a number of variables, I find a small, but significant effect of the youth bulge on localized protests. Nevertheless, the reality is complicated by the fact that certain societal conditions, such as the practice of polygamy, seem to exacerbate the overall effect.

The results are then presented, discussed, and interpreted in the context of the prior work on this subject. In many ways, the central finding is not surprising and falls into agreement with much of the literature. On the other hand, many studies exist which have failed to find a similar association. This paper is unique in that it eschews a global focus in favor of a regional one, in addition to making some methodological modifications. Case studies of the Nigerian and Tanzanian experience seek to localize the broader findings of the paper and to discuss how they apply to the history and realities of individual African nations, coming to similar conclusions as the principal study. Lastly, I also suggest further questions for future study.

Literature Review

There exists a large and, at times, contradictory literature surrounding the relationship between large male youth populations and political violence. As is often the case in social science research, the myriad ways in which a particular variable is defined has a strong impact upon the obtained result. As such, it is important to pay special attention to these definitions and to mechanisms through which the noted relationships are purported to express themselves. It is also important to explore the mechanisms that strengthen or weaken the noted relationship.

I shall begin by furnishing a brief overview of the relationship between youth bulges, male alienation, and civil conflict as discussed in the popular press. Secondly, I examine the demography literature insofar as it explains the origin of youth bulges. Thirdly, I will provide a look at the civil war literature. Because the causes of conflict are deeply multifaceted, it is essential to understand how demographics work with other factors in an interlocking manner to create the societal conditions in which the flames of conflict can spread. Fourth, I examine the protest literature and the ways in which it differs from civil war theories. Finally, I will explore my central question more directly by giving an overview of the relationship between demographics and conflict as it has been previously established or refuted, exploring both the civil war and protest angles.

I. Youth bulges and male alienation in the popular imagination

In recent years, the Western media has been swept up in an increased fascination with the concept of large youth populations, primarily due to three disparate factors. Attempts at accounting for the causes of terrorism, as well as providing an account of the dawn of the Arab Spring and the problem of East Asia's "missing women" have all drawn the attention of the press

insofar as they feature either large youth populations or gender-imbalanced demographic profiles at the center of the story. I consider each, and their significance to this study, in turn.

Western fears of terrorism in the post-9/11 era have seen the eruption of a multitude of analyses in the media surrounding the roots causes of terrorism. Often the analysis is psychological or sociological in nature, focusing on mental health issues and the ways in which terrorists were socialized into their adopted group identities. But at the center of it all is the young, alienated male in search of an identity, often with no prospects for serious career advancement or education. Often times this focus is placed upon Saudi Arabia, the homeland of 15 of the 19 September 11th attackers. As Caryle Murphy notes in her paper for the Wilson Center (2011), 51% of the Kingdom's population is under the age of 25. The country's large number of foreign workers, its bloated public sector, and its heavy reliance on fossil fuels means that many of the country's young people feel that they have little to no reasonable job prospects. Add to that the sexual frustration faced by many due to Kingdom's rigid gender segregation laws, and it is perhaps no surprise that many young men are tempted by the reach of radical Islamic organizations, groups that offer them an identity, a cause to fight for, and a belief that they are making something important of their lives. In other words, the effects of the youth bulge are magnified through the economic alienation of the populace.

Indeed, it has been shown on a number of occasions that youth bulges and terrorism are linked through the process of urbanization (Lia, 2005:141; Goldstone, 2001). Many parts of the developing world, including the Middle East and Africa, are currently experiencing rapid population growth at the same time that they are urbanizing. The combination of an ever-growing young cohort, increased population densities, and cultural alienation points to an elevated likelihood that many young men will turn to terrorism.

Likewise, much has been said in the media over the past few years about the young people at the heart of the 2011 Arab Spring. Recently, *The Economist* discussed the Middle East's young population profile and the fact that youth unemployment in the region is twice the global average (2016). In his well-known book *The Clash of Civilizations and the Remaking of World Order*, political scientist Samuel Huntington asserts that he does not believe Islam to innately be a more violent religion than others, but that its youthfulness means that its practitioners are more likely to engage in terrorism or civil conflict (2001:1). Likewise, Fareed Zakaria discusses the destabilizing nature of youth bulges on the Muslim world in a 2001 *Newsweek* article, arguing that these young men will pose a danger to the region and to the world for years to come.

At the core of this demographic theory lies the notion that it is young *men* in particular who unleash violence upon a society when their numbers are excessively large. In an aptly-titled 2016 article called "Of men and mayhem," the editors of *The Economist* warn of the dangers of large populations of "unmoored men." After all, men kill other men at a rate nearly a hundred times that of their female counterparts. Matt Ridley argues in "The Evolution of Everything" that young men in their late teens and early 20s have a strong appetite for violence due to their competition for mating opportunities.

As such, a lack of opportunities for family formation appears to be especially dangerous. When marriage markets are as unbalanced as they are in certain parts of the world, many young men are left without any serious prospects for partnership, thus leaving them "unmoored" from one of society's central institutions. In East Asia, this imbalance arises from the sex-selective abortions that have created a population imbalance. In the Muslim world, including in the Middle East and across much of Africa, the practice of polygamy similarly constricts the marriage

market. If opportunities for civil conflict to erupt are to be limited, it is important to consider how other factors work in tandem with each other and with demographics to bring about a scenario where the likelihood of political violence is relatively high.

II. Why do youth bulges exist?

Since Thomas Malthus first wrote on population demography in his influential work *An Essay on the Principle of Population* (1798), many worked to analyze and better comprehend the demographic transition that has affected the human population since at least the early part of the 19th century. At the time, Malthus posited that a series of mostly economic checks and balances worked to keep population levels in perpetual equilibrium. He argued that the rate of growth in food production would never be able to catch up to a rapidly growing human population. At the time he was writing, birth rates and death rates were high across the world, meaning that the majority of adults were quite young.

In a comprehensive work on the topic of the demographic transition, economist Ronald Lee (2003) explores the nature by which economic development and other factors led to a decline in mortality as states industrialized, followed in turn by a drop in birth rates. Improvements in public health, sanitation, and nutrition led to the former, while access to contraception and a shift away from labor-intensive agriculture-based economies led to the latter. These two trends together work in confluence with each other to bring about population aging.

While most countries in Western Europe and North America began this transition in the time of Malthus, today's low-income countries did not begin this process until much later. In the case of Sub-Saharan Africa, it was not until sometime after the Second World War that one can

say it truly began. The region further had to contend with various other population pressures, including a heavy tropical disease burden, that today's high-income societies simply did not face.

Without significant economic development and industrialization, a country cannot proceed through the various stages of the demographic transition. While the development that has occurred in the last half-century have instigated a version of this process, the explosive impacts of the HIV/AIDS epidemic have counteracted much progress on the African continent. Among other negative impacts, the epidemic has kept mortality rates high and life expectancies low. During the worst periods of the epidemic, some countries maintained life expectancies in the 30s and 40s, meaning that a very large proportion of their adult populations were quite young. According to Kalemli-Ozcan (2011), the impact of the AIDS epidemic on African fertility rates are yet to be fully understood, but this is nevertheless outside the scope of this study since I am principally concerned with young adult, not child, populations.

III. Conflict I: Civil War

The causes of civil wars and conflict have been analyzed in great detail in an exhaustive literature. There exist two principal frameworks, or approaches, to explaining why civil conflicts erupt: the opportunity-oriented perspective and the motive-driven approach. The opportunity, or greed-driven, approach is fundamentally rooted in economics and mainly concerns conditions in which rebels have the financial resources with which to wage a war against the state (Collier & Hoeffler, 2004). This could also include those conditions where the costs of war or of recruitment are relatively low. On the other hand, the motive, or grievance-driven, perspective is mainly rooted in psychology and relative deprivation theory. According to Gurr (1970), this

framework sees the main causes of civil war as arising from a populace's legitimate economic and political concerns, including poverty and authoritarianism.

Much work has sought to evaluate civil conflict onset from these two perspectives. For the most part, researchers have found the opportunity framework to provide much more robust justification for civil conflict onset than the grievance approach. Both Fearon & Laitin (2003) and Collier & Hoeffler (2001) make this finding in their work.

In their research, Fearon & Laitin attempt to explain why there was such an excess of civil conflicts after the end of the Cold War, with the conventional wisdom holding that ethnic fractionalization and nationalism were the main causes of this occurrence. In looking at independent variables that may explain civil war onset, the authors find no evidence that ethnic diversity, heterogeneity, political systems, or the presence of grievances have any predictive or explanatory power with regards to civil war onset. Instead, they focus on the concept of insurgency. In exploring civil conflict onset through the lens of guerrilla warfare and insurgency, F&L are able to deduce that income and poverty have significant predictive power with regards to civil conflict, with low-income areas being much more likely to give rise to insurgencies than medium- or high-income areas. Numerous other variables are also analyzed, but none seem to have an effect on conflict onset, including inequality.

Likewise, Collier & Hoeffler look at civil war onset as the dependent variable and attempt to discover independent variables with strong predictive power. C&H differ in their methods by looking at the likelihood of conflict outbreak over every five-year period from 1960 to 1999. Over the course of their econometric analysis, they did not find ethnic fractionalization or heterogeneity to be strong indicators of conflict onset. Much like F&L, however, they *did* find that strong explanatory power rest with the per capita income and secondary schooling variables.

On the other hand, primary commodity exports factor highly in the "greed" analysis of C&H due to the increased opportunity for monetary gain. F&L found no such strong relationship. Overall, C&H find great explanatory power in opportunity and greed. Primary commodity exports and military advantage provide opportunity, whereas male secondary school enrollment and higher incomes eschew it. They also look at grievance, but, like F&L, they do not find much explanatory power in the variables normally associated with that, such as inequality.

On the other hand, Cederman et al. (2011) find a role for grievances in civil conflict onset. A number of scholars have looked at individual inequality as an independent variable to explain civil war onset, but Cederman et al. use horizontal inequities, both economic and political, among groups to predict civil conflict. A new, unique spatial method is employed to determine that inequalities in per capita income *are* significant in explaining the likelihood of civil war. Both poor and rich groups appear to be more likely to fight than groups that are closer to the average per capita income for a given country. Inequities in ethnic group access to executive power is utilized as a political variable, and it appears to be significant as well. As a result, Cederman et al. conclude that grievances *do* play a role in civil conflict onset.

IV. Conflict II: Protest

Much work has focused too on protests and other forms of contentious politics, both peaceful and violent, and both planned and spontaneous. In many regards, this literature mirrors the civil war theory in its continual debate between proponents of grievance-based explanations and those of opportunity-based ones. Hendrix et. al (2009) summarize this debate in their work, explaining that the grievance framework operates through the mechanism of relative depravation theory to alienate those who feel that they are being left behind relative to their expectations.

Often scholars examine this through the mechanism of food shocks or steep fluctuations in the prices of essential commodities. Nevertheless, much like in the civil war literature, great amounts of ink have been spilt refuting the viability of such a grievance framework.

On the other hand, the opportunity approach seems to be better suited at explaining protest. Branch (2015) has made the argument in his book *Africa Uprising* that high rates of urbanization have greatly improved the opportunities of a populace to organize and protest. He acknowledges that rising food prices and other grievances may be constitute motives for protest activity, but he also argues that opportunities for protest are what truly matter, with the demands taking on a distinctly political flavor, urging for the end of political repression. Hendrix et al. (2009) likewise argue that regime type matters a great deal: hybrid regimes pose the greatest opportunity for protesters, whilst autocracies can easily cut off all channels and dissent and democracies can be more easily influence through traditional mechanisms, such as elections.

V. Youth bulges and civil conflict

The role of youth bulges in civil war and protest onset is best understood through the grievance framework. The understanding is that youth become aggrieved by lack of economic or educational opportunities at the personal level or by political concerns at the macro level; regardless, it is the fact that they have qualms that pushes them to resistance (Choucri, 1974; Braungart, 1986). Most work on the topic of civil war, from F&L to C&H to Blattman & Miguel (2010), are not persuaded by the grievance framework, and thus also do not find that the presence of large youth cohorts has explanatory power for civil conflict. Cristopher Cramer likewise writes that there does not exist a direct link between young male unemployment and political violence, that the association lies more in the loss of belonging and identity than in

unemployment itself *per se* (2010). Resnick and Casale (2011) argue that youth bulges are *not* associated with increased levels of protest activity in Sub-Saharan Africa, and that youth indeed display lower levels of civic participation and involvement than their older counterparts.

However, the grievance-based approach is not universally dismissed, as attested to by Cederman et al. Likewise, Urdal (2006) finds that the lines between the two approaches are needlessly strict and that youth bulges *do* in fact explain conflict. Some factors, he writes, are after all classifiable under both frameworks, and no opportunistic incentive for war would exist without some grievances. He determines that large cohorts of young people ages 15 to 24 can predict great increases in the likelihood of organized political violence. Urdal disagrees explicitly with both F&L and C&H, arguing that the reason why their research found no such predictive effect was because they calculated youth as a percentage of the *entire* population and not just as a percentage of the *adult* population. He also cites Collier's concession that large youth bulges *can* act through the opportunity approach to increase violence by allowing a pool of child soldiers to be cheaply recruited (Collier, 2000: 94).

He also uncovers several variables that can either exacerbate or diminish the likelihood of civil conflict in cases where youth bulges are already present. For instance, access to secondary and higher education seems to pacify violent youth, whilst having a governmental system roughly halfway between democracy and authoritarian dictatorship will only make matters worse (Hegre et al, 2001). Blattman and Annan (2010) confirm in their study in the Ivory Coast that providing agricultural training to former child soldiers greatly reduces their likelihood to sign up as mercenaries. Providing inexpensive access to quality education seems to pacify youth, as long as employment opportunities exist. Education both provides opportunities that diminish grievances, and if it is less costly than joining the militia, can eliminate the opportunistic

incentives of rebelling and raises the costs of recruitment substantially (Choucri, 1974: 73; Brett & Specht, 2004; Collier & Hoeffler, 2004).

In a different paper, Urdal (2004) argues that the grievance-based approach *can* be a way of linking youth bulges and protests. He finds that slow economic growth and few employment opportunities do seem to be predictors of protest activity among youth. Importantly, he notes that while improving educational opportunities may be helpful, this is only the case if employment opportunities are equally generous, a similar result to the finding in the aforementioned study. If not, the likelihood of protest increases. Many scholars have found that African youth spend many years in a period of transition between childhood and adulthood known as "waithood," a time in which they are likely to develop significant economic grievances, which may in turn lead to protests (Honwana, 2014). With regards to the opportunity literature, Urdal's work falls into agreement with Hendrix et al. (2009) in that quasi-authoritarian regimes appear to provide the best opportunity for protest.

One might question why youth protests are often viewed negatively. If youth are involved in protest, does that not demonstrate a commitment to civic engagement? According to Hart et. al (2004), the age structure of a society matters deeply in answering this question. If a country is "saturated" with children—if the large young adult population coexists primarily alongside a very large population of children, and not alongside a sizeable population of older adults, youth are not likely to demonstrate significant civic values in their political engagement. What the implications of this finding is for protests is not entirely clear, but it demonstrates that the negative view of these events, especially in Sub-Saharan Africa, may be justifiable.

On the other side of the coin, declining fertility rates and increasing life expectancy throughout the world may in the future bring the planet to what Urdal calls "a geriatric peace."

The exemplar of this notion is Japan, a country of great life expectancy and tiny fertility rates. It and other countries like it are viewed as paragons of peacefulness, and Japan's median age of 47 is taken as evidence of the fruits that an older world will someday bring.

Data and Methodology

The methods utilized in the completion of this study are rooted primarily in data collection and statistical analysis. I began by collecting data from reputable sources, making certain to verify the relevance of the data to my project and seeking out appropriate control variables. Upon completion of this process, I undertook a fixed effects panel data regression analysis using a statistical software package.

I commenced by compiling data on the independent variable, the percentage of young males aged 15 to 24 in a given African country's *adult* male population, with adult being defined as those aged 15 or older. I employ this definition because of the strong arguments made by Urdal throughout his various publications in favor of drawing this delineation. He argues that numerous researchers have failed to find a significant effect tied to a youth bulge measure because of their use of a metric of *total* population as the denominator. In Sub-Saharan Africa especially, populations are very young, with countries such as Niger and Uganda counting 50% or more of their populations under the age of 15. The inclusion of this huge number of children under 15 would serve to "deflate" the youth bulge indicator and render the mechanism more difficult to study. As such, accounting only for the adult population is considerably more valuable.

The data on youth populations comes from perhaps the leading source on the topic of world population, the United Nations Population Division. The numbers are widely accepted as reputable, and the data is subdivided by age group in multiple different ways, making a calculation of the aforementioned youth bulge measure fairly straightforward. One drawback did present itself, however: the data is only available in five-year increments from 1990 to 2015. Albeit I recognized this as an excellent timeframe to study, I also needed data on the intervening

years to associate with the dependent variables in my study. Due to the fact that few other sources exist with data that is both as reputable and as complete as that of UNPD's, I opted to interpolate the "missing" population data by fitting the quinquennial data to a linear line. Whilst numerous drawbacks do abound with this strategy, most notably the very high likelihood that many of these numbers do not evolve in a manner resembling anything close to a straight line, I believe that the small timeframe involved is sufficient to warrant such an approach. Summary statistics (Table 1) and a graph (Fig. 1) of the data follow:

Variable	Youth bulge (%)
Number of observations	1,118
Mean	35.52
Median	35.583
Minimum	19.73
Maximum	42.054
Variance	8.572
Standard deviation	2.927

Table 1

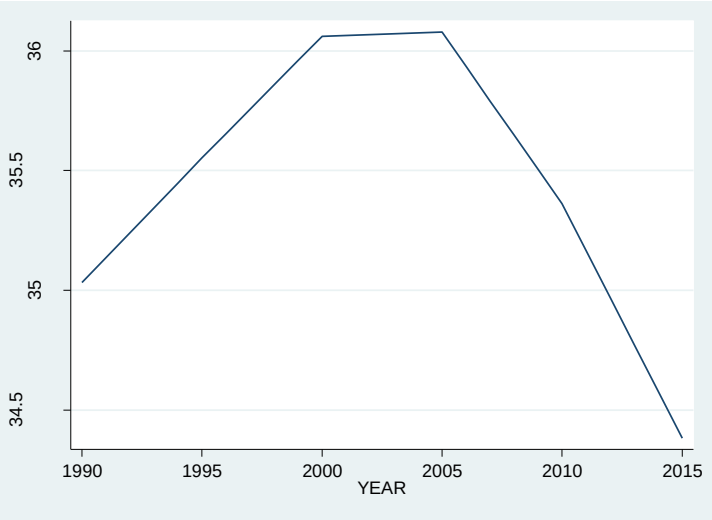

Fig. 1

The evolution of the average Sub-Saharan African youth bulge size is mountainous in shape, as seen in Figure 1 above. This bizarre formation, rising in size throughout the 1990s before plateauing and falling back down throughout the 2000s, warrants investigation. The available literature attributes much of this odd, and yet very small, transition to the HIV/AIDS epidemic and the rising death rates that caused the proportion of young people within the greater adult population to swell. I investigated this correlation by running an ordinary least squares regression (OLS) of my youth bulge metric on a measure of the proportion of people living HIV in the countries of study to determine if a correlation was present. This dataset was sourced from UN AIDS and covers the relevant parameters of the study at hand.

Table 2 indicates that an increase of one percentage point in the HIV-infected population is associated with a 6.1% increase in the youth bulge. The finding is statistically significant at both the 5 and 1% levels.

Table 2: Youth Bulge and HIV/AIDS

	Percent Youth
% w/ HIV	0.061
	(5.76)**
_cons	35.530
	(368.94)**
R^2	0.03
N	962

* $p<0.05$; ** $p<0.01$

Next, I set to collecting data on my principal dependent variable, a measure of protest activity in Sub-Saharan African nations. In deciding the appropriate scope of this variable, I made the determination that focusing on civil war and armed conflict would not be apt in this

situation for four main reasons: 1.) fewer studies have explored the relationship between youth bulges and protests than with civil war, 2.) civil war events are often too few in number to provide for encouraging statistical analysis, 3.) the causes of such large-scale events are often deeply geopolitical in nature and may not be as directly tied to the status of a country's population as some smaller events might be, and 4.) the empirical findings of the literature are similar for both civil war and protest regardless. Conversely, I also decided that street crime, petty theft, and other small levels of criminality were unlikely to provide serious population-related implications even if a statistically significant association were found. As such, I chose protest events as a suitable middle ground and consequently the main dependent variable.

In finding the necessary African protest data, I looked to two well-known, reputable databases of social conflict studies. SCAD, the Social Conflict Analysis Database, and ACLED, the Armed Conflict Location and Event Data Project, proved to be the most salient sources of African conflict data. Fortunately, both provide data on the years from 1990 to 2015, the years set as the parameters for my study. I elected to use SCAD because of its stronger micro-level data component and its method of sub-classifying myriad protest-type events. Of these types of events, I selected four that I found most relevant to my overall research question. Numbered in the dataset from 1 to 4, these include: organized demonstrations, spontaneous demonstrations, organized violent riot, spontaneous violent riot. I did not include other event types, such as general strikes, that would likely be more associated with a country's economic situation than with its demography.

The SCAD dataset is rich in the information it provides about its data points. It furnishes the researcher with an exact location, time span, start and end dates, number killed, and often a brief description of the events involved. I compiled a data file, pairing the youth bulge data with

the conflict data, taking care to maintain distinctions between the four event types while also accounting for the total number of events. In addition, I included a dichotomous variable for each event type and for the total events variable, asking only if *any* events transpired in a given country in a certain year. For events spanning multiple years, I coded that data point to the year in which that event began.

Variable	Protests (continuous)	Protests (dichotomous)
Number of observations	1,118	1,118
Mean	4.384	0.713
Median	2	1
Minimum	0	0
Maximum	67	1
Variance	59.093	0.205
Standard deviation	7.687	0.452

Table 3

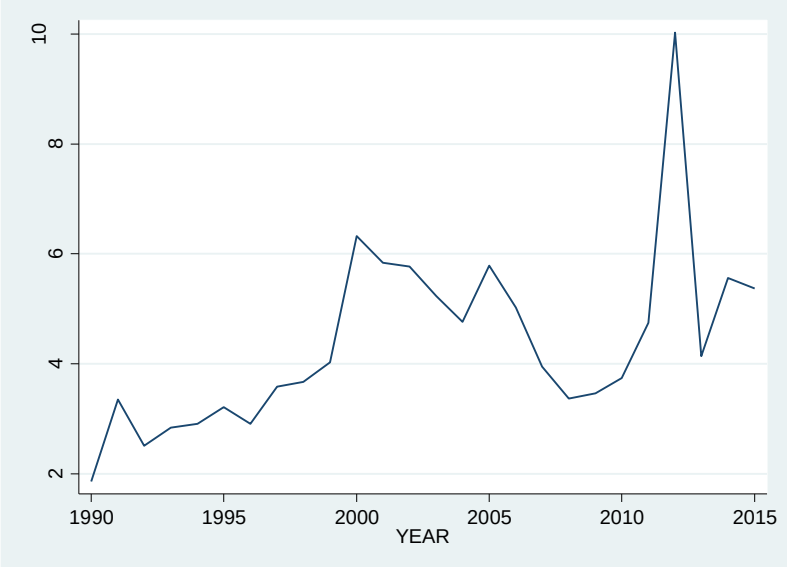

Fig. 2

In a research study of this sort, confounding variables need to be taken into careful consideration if a meaningful result is to be produced. Finding a link between population dynamics and conflict may be noteworthy, but without accounting for various other variables it is difficult to evaluate the relationship between the dependent and the independent variables, and the regression may be spurious. In finding adequate control variables, I considered carefully what factors may be correlated with both the dependent and independent variables.

Including a measure of economic well-being is important because propensity to protest is highly correlated with one's economic and social situation, and because birth rates are likewise impacted by wealth. I determined that GDP per capita would provide an appropriate measure of socioeconomic status, and I sourced the relevant data from the World Bank. The World Development Indicators it provides were utilized to generate GDP per capita numbers for every country in Sub-Saharan Africa from 1990 to 2015.

I also wanted to include a measure of political freedom, since ability to protest and the likelihood that citizens will engage in it is partly reflected by the nature of the active political regime in a given country. As such, I looked to Freedom House, one of the leading non-governmental organizations that champions political liberties, for a relevant dataset. The institution furnishes two sets of scores: one that measures political rights and one that measures civil liberties. Both sets are scalar and measured from 1 to 7, with a score of 1 representing a country that is "most free" and a 7 representing one that is "least free." In creating a single variable, I added these two scores for each country in the region for the appropriate 25-year period.

Due to the fact that some events, like elections and civil wars, are highly associated with protest activity, I decided to control for these factors as well. I included two dichotomous

variables, one accounting for elections and the other for civil wars, in the dataset. Both are coded as 1 if an event occurred during a given year and 0 if no events transpired. As part of the election variable, I included both national and local elections, as well as referenda. The civil war data comes from the Uppsala Conflict Data Program in Sweden, and it defines a civil war as any state—group conflict with a minimum of 25 confirmed battle deaths.

Upon completion of the dataset, I proceeded to conduct regression analysis. Since I am studying the protest behavior of people in numerous countries over a given time span, I am conducting a panel data analysis. I use a fixed effects model, as shown below, because I am looking to remove the unobserved effect prior to estimation, along with any time-constant explanatory variables. This is typically the estimator that is employed in policy analysis of this sort, as I am seeking to compute effect size for the identified population and due to the fact that all the country-level studies are functionally identical and were not independently produced. I am essentially seeking to understand not just the relationship between youth bulges and protest, but also how that relationship changes over time.

$$y_{it} = a + x_{it}\, b + v_i + e_{it}$$

I do not employ a random effects estimator because I do not conclude that the unobserved effect is uncorrelated with all my explanatory variables, nor am I faced with a random sample of data at different levels. Rather, I operate under the general assumption that there is one "true effect" that is the same for all the studies.

For my main regression, I employed the dichotomous variant of the total events variable. I opted for this because I believe the difference between *zero* and *any* events is more fundamental to my core research question than perhaps the difference between *3* and *4* events. In other words, the difference between 0 and 1 is the difference between peace and conflict while

the difference between 3 and 4 only describes different shades of unrest. The former is likely to be more important to a study of demographics than the latter.

I used the statistical software package Stata to run the fixed effects regression. I regressed the total events measure on the continuous variable describing a given country's youth bulge. I controlled for GDP per capita, the country's Freedom House scores, whether an election was held in a given year, and whether a civil war was in the process of transpiring. Whilst my main dependent variable here is categorical, I opted against the use of a logistic model like Logit or of a normal model such as Probit. This allows for a more straightforward understanding of the results, and is a practice that has been gaining ground in recent years in social science research.

In order to gain a more comprehensive understanding of the many mechanisms at play, I also executed this same regression on Anglophone and Francophone countries separately, on different geographic areas of the continent, and on the basis of the majority or plurality religion in the country. I also studied organized and spontaneous protest events separately by utilizing the accompanying dichotomous variables; I hypothesized that spontaneous events may be more related to the size of the youth population than organized events which could have greater linkages to larger sociopolitical activities.

Results

I run different regressions based on country language, geography, country religion, and protest event type. The results follow below.

Table 4: Protest Events, by Country Type (Fixed Effects)

	All Countries	Anglophone Only	Francophone Only
Percent Youth	0.033	0.037	0.009
	(3.08)**	(2.32)*	(0.50)
GDP Per Capita	0.000	0.000	0.000
	(2.42)*	(1.00)	(3.20)**
Sum FH Scores	-0.008	-0.006	-0.020
	(1.10)	(0.70)	(1.47)
Election	0.090	0.075	0.102
	(3.31)**	(1.95)	(2.46)*
Civil War	0.000	0.080	0.033
	(0.00)	(0.95)	(0.62)
_cons	-0.449	-0.619	0.381
	(1.14)	(1.04)	(0.59)
Rho	0.298	0.357	0.492
R^2	0.02	0.02	0.04
N	1,095	473	468

* $p<0.05$; ** $p<0.01$

Table 4 represents one of the main regressions in the study, whereby I regressed a metric of events on a measure of the youth bulge in Sub-Saharan African countries by conducting a fixed-effects regression. The first column furnishes the relevant results for the principal regression, while the second and third columns provide data differentiated based on linguistic and colonial history.

The regression output in the first column, "all countries," indicates that, holding all else constant, an increase of one percentage point in the youth bulge is associated with a 3.3 percentage point increase in the likelihood of an event. Given the very low p-value (0.002), this result is highly statistically significant.

The included control variables act as a safeguard against over-attributing the occurrence of an event to the size of the youth bulge. One of the control variables, a dichotomous measure of

whether an election happened in a certain country in a given year, is statistically significant at the 1% level. All else being equal, the occurrence of an election is associated with an 8.97 percentage point increase in the likelihood of an event.

The other three control variables, on the other hand, lack significance at the 1% level. A measure of GDP per capita is barely significant at the 5% level, but the other two, a metric of political freedom tabulated from Freedom House scores, and a dummy variable that is 0 if a civil war was not taking place or 1 if it was, are not. In these cases, the coefficients indicate that changes in these variables are associated with negligible change in the likelihood of an event.

Further substantiating the significance of this model is the fact that the F-statistic, 0.0002, is far lower than 0.05. This allows us to reject the null hypothesis that all the coefficients are equal to zero.

R-squared is quite low, indicating that the model explains fairly little of the response data around its mean. R-squared here is a weighted average of measures of the variance within, as well as between, panel units that is accounted by the model. It only accounts for about 2% of this variance. This is not inherently problematic because I am attempting to understand the marginal effect of the male youth bulge upon protest activity and not a physical process where high levels of precision are important. R-squared is not determinative of whether coefficient estimates are biased, and here I have found coefficients with statistically significant predictors. This allows me to draw certain conclusions despite the low R-squared values.

The output also reports rho, the interclass correlation and a function of sigma_u and sigma_e. It indicates that 29.77% of the variance is due to differences across panels.

Conducting this regression for Anglophone and Francophone countries separately revealed some surprising results. Holding all else fixed, an increase of one percentage point in

the youth bulge of an Anglophone country is associated with a 3.7 percentage point increase in the likelihood of a protest event. The p-value indicates that this coefficient is statistically significant at the 5% level. For Francophone countries, however, an increase of one percentage point in the youth population is associate with merely a 0.9 percentage point increase in the likelihood of a protest event, and it is not significant at the 5% level.

While traditional understandings of African colonialism claim that the British and French models were differentiated by a focus on indirect and direct rule, respectively. Nevertheless, numerous scholars, including Jeffrey Herbst (2000), allege that this dominant understanding is overblown, as the French did not appear to make the investments in road infrastructure or education that would typically be associated with direct rule. Hence, it is quite likely that differing colonial experiences might not be the main story here. I theorized that the odd result might be tied to geography, so I executed another regression, this time on a regional basis as shown in Table 5.

Table 5: Protest Events, by Geographic Region (Fixed Effects)

	West Africa	Central Africa	East Africa	Southern Africa
Percent Youth	0.080	0.045	0.012	0.029
	(3.08)**	(1.61)	(0.77)	(1.23)
GDP Per Capita	0.000	0.000	0.000	-0.000
	(2.59)*	(2.81)**	(0.85)	(0.06)
Sum FH Scores	-0.008	-0.014	0.006	-0.013
	(0.64)	(0.68)	(0.37)	(0.73)
Election	0.103	0.072	0.158	0.011
	(2.31)*	(1.25)	(2.58)*	(0.18)
Civil War	-0.012	0.074	-0.030	-0.096
	(0.18)	(1.06)	(0.38)	(0.50)
_cons	-2.201	-0.955	0.148	-0.250
	(2.33)*	(0.93)	(0.24)	(0.28)
R^2	0.05	0.05	0.03	0.01
N	390	239	258	208

* $p<0.05$; ** $p<0.01$

The results are revealing: much of the variation is explained by the West African sector, which consists almost entirely of French-speaking nations. Holding all else constant, an increase

of a single percentage point in the youth bulge of a West African country is associated with an astounding 8 percentage point increase in the likelihood of an event. This finding is statistically significant at even the 1% level, while none of the other regions have significant coefficients at even the 5% level.

Unfortunately, this result contradicts the previous finding, and I was thus forced to reevaluate. Since West and Central Africa contain nearly all the Muslim-majority countries in Sub-Saharan Africa, it began to appear much more likely that the presence of Islam and hence, the institution of polygamy, have a stronger effect than either French or British colonial heritage. I performed the regression again, this time dividing the countries of Sub-Saharan Africa into Muslim-majority countries and non-Muslim-majority countries, which in practice contain either Christian or animist majorities or pluralities, or in the case of Mauritius, a slim Hindu majority. The relevant results are summarized in Table 6.

Table 6: Protest Events, by Religious Majority (Fixed Effects)

	All	Muslim	Other
Percent Youth	0.033	0.040	0.025
	(3.08)**	(2.15)*	(1.95)
GDP Per Capita	0.000	0.000	0.000
	(2.42)*	(2.79)**	(1.43)
Sum FH Scores	-0.008	-0.021	0.002
	(1.10)	(1.77)	(0.25)
Election	0.090	0.039	0.113
	(3.31)**	(0.80)	(3.44)**
Civil War	0.000	-0.006	-0.008
	(0.00)	(0.11)	(0.14)
_cons	-0.449	-0.626	-0.270
	(1.14)	(0.91)	(0.56)
R^2	0.02	0.05	0.02
N	1,095	336	759

* $p<0.05$; ** $p<0.01$

Holding all else constant, an increase of a single percentage point in the youth bulge of a Muslim-majority country is associated with a 4 percentage point increase in the likelihood of an event. This finding is statistically significant at even the 5% level, while significance is not found

in the countries with a non-Muslim majority.

I also interacted the youth bulge measure with a dichotomous Muslim variable, 1 if the country is mainly Muslim and 0 if it is not, to be able to look at the differing marginal effects of the youth bulge depending on religious status. The finding depicted in Figure 3 confirms that this marginal effect is larger for Islamic nations than for non-Islamic nations. The practical meaning of this finding is that certain elements of Islamic life, including polygamy, exacerbate the effect of the youth bulge on protest, as young men have fewer opportunities at family formation.

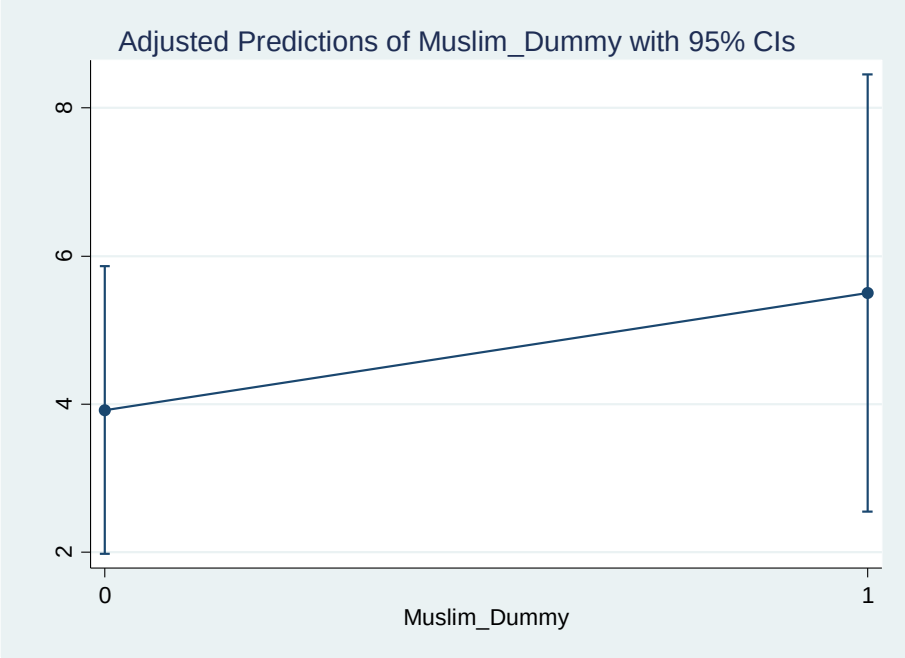

Fig. 3

I also conducted a panel data regression analysis by subdividing the four relevant event types as follows: type 1 – organized demonstration, type 2 – spontaneous demonstration, type 3 – organized violent riot, and type 4 – spontaneous violent riot. I hypothesized that my findings would be more significant with regards to the spontaneous events because organized events have stronger geopolitical ties whilst spontaneous events are more rooted in the everyday. The pertinent results are summarized in Table 7.

Table 7: Protest Events, by Type (Fixed Effects)

	Type 1	Type 2	Type 3	Type 4
Percent Youth	0.021	0.016	0.025	0.025
	(1.77)	(1.35)	(3.17)**	(2.13)*
GDP Per Capita	0.000	0.000	0.000	0.000
	(1.90)	(2.54)*	(0.28)	(1.24)
Sum FH Scores	0.000	0.004	-0.001	-0.005
	(0.05)	(0.54)	(0.12)	(0.63)
Election	0.027	0.085	0.070	0.070
	(0.89)	(2.81)**	(3.46)**	(2.30)*
Civil War	0.083	0.005	-0.002	0.059
	(1.88)	(0.11)	(0.06)	(1.35)
_cons	-0.477	-0.225	-0.788	-0.487
	(1.08)	(0.51)	(2.70)**	(1.11)
R^2	0.01	0.01	0.02	0.01
N	1,095	1,095	1,095	1,095

* $p<0.05$; ** $p<0.01$

Rather than confirming my particular suspicions, this output shows that the main divide in significance is not one between planned and unplanned events, but between demonstrations and violent riots. Neither of the coefficients on the demonstration metrics are significant, whereas both of the violent riot coefficients are. For both types 3 and 4, a one-percentage point increase in the youth population is associated with a 2.5 percentage point increase in the likelihood of a violent riot.

To better understand these findings, it is helpful to explore them at the country level. Consequently, two case studies on the Nigerian and Tanzanian experiences follow.

Case Study: Nigeria

I. Background

Nigeria is a large country situated on the Atlantic coast in the western part of the African continent. The most populous country in Africa, Nigeria accounts for one-sixth of all Africans with a rapidly growing population of 190 million people. It is expected that by 2050, Nigeria will have overtaken the United States to be the world's 3rd most populous nation and will boast an astounding population of 440 million.

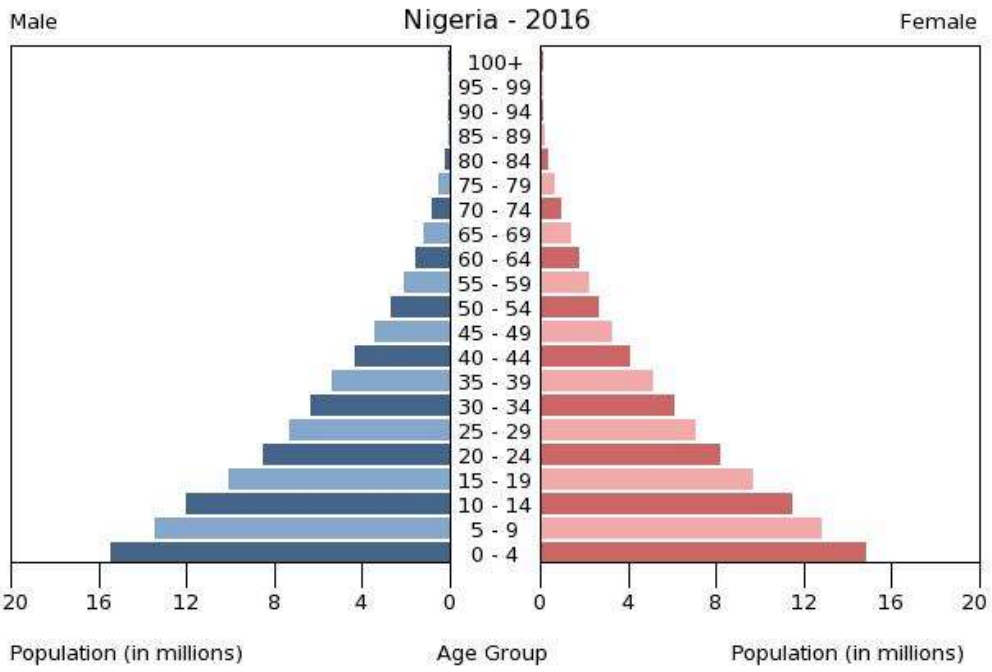

Fig. 4

The change in the country's youth bulge is similar to that seen in neighboring countries in the region, depicting the "hump" shape that is seen below in Figure 5. The country's experience with protests is also fairly similar to that of other Sub-Saharan African states, although it has had a relatively greater number of them. Overall, the youth bulge measure is somewhat more predictive of protest than it is in other countries.

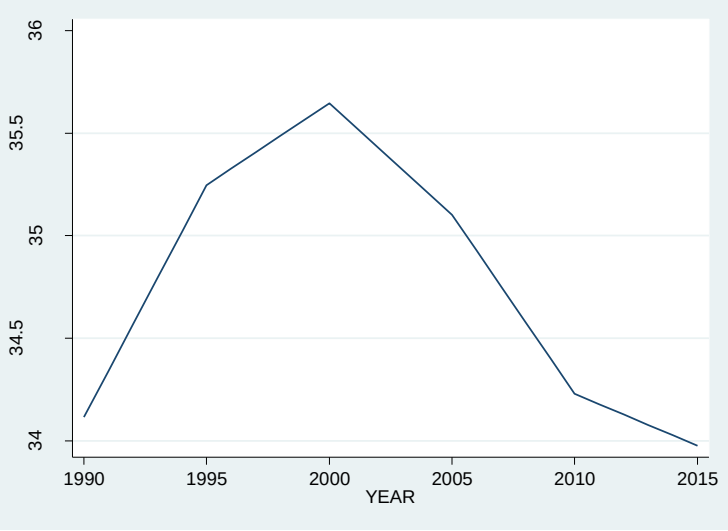

Fig. 5

The rapid growth of the population is the result of a very high fertility rate—about 5.5 children per woman—and of population momentum, as can be noted in the population pyramid in Figure 4. The median age of the population is only 18 and those over 65 account for a far smaller proportion of the population than in any developed nation. However, the Nigerian demographic story is not playing out evenly across the entirety of the country, making an excellent case for further study. There exists in Nigeria a rather stark north-south divide, as depicted in the map in Figure 6. The Northern states are characterized by their majority Islamic character, at the same time that those in the South are primarily Christian or animist.

Fig. 6

As indicated on the map, the legal systems also differ between the two halves of the country, with the South utilizing the British common law system and the North employing sharia law. The practical effect of this difference for this study is that polygamy is legal and practiced in the North, whereas the same does not hold true for Southern Nigeria. In fact, according to *The Economist* magazine, 40% of married Northern women share a husband (2016). This astounding fact means that the North has far more unmarried and "unmoored" young men than the South does, providing us with an excellent point of intra-country comparison for the purposes of this study. The North is indeed the home and stomping grounds of the infamous terror group Boko Haram, and the region also suffers from greater poverty, lower GDP per capita, and lower foreign investment than the oil-rich South. According to the Pew Research Center, Christian Nigerians have on average 7.1 years of formal schooling, whilst their Muslim counterparts only enjoy about 3 years of education.

I collected state-level population data for each state, paired it with the relevant data from the SCAD dataset, and aggregated the set into two categories: Northern and Southern states. I ran

a regression in much the same way as I did in the main body of the study, controlling for GDP per capita.

II. Findings

I conducted a fixed effects regression using the Nigerian protest data. The relevant findings from the econometric analysis are summarized in Table 8.

Table 8: Protest Events, by Region of Nigeria (Fixed Effects)

	North	Nigeria	South
Percent Youth	0.039	0.035	0.018
	(4.42)**	(5.39)*	(1.93)
GDP per Capita	0.004	0.002	0.002
	(1.17)	(0.68)	(1.23)
Sum of FH Scores	-0.041	-0.027	-0.029
	(1.19)	(1.38)*	(1.98)
Election	0.137	0.042	1.015
	(0.69)*	(0.87)	(0.33)
Civil War	0.008	0.009	0.087
	(0.11)	(0.43)	(0.04)
_cons	-0.092	-0.078	-0.094
	(0.96)	(0.87)	(0.69)
R^2	0.08	0.07	0.05
N	494	936	442

* $p<0.05$; ** $p<0.01$

The results are as expected. Holding all else constant, a one-percentage point increase in a youth bulge is associated with a 3.9 percentage point increase in the number of protest events in Northern Nigeria. This finding is statistically significant at the 1% level, as is the finding for the whole of Nigeria.

On the other hand, the result for Southern Nigeria is not statistically significant. Given the differences between the two regions in terms of religion, polygamy, legal system, and economic status, this makes sense. The young men in Southern Nigeria have more opportunities to become employed and to become educated than their counterparts in the North, and they also have far more opportunities at marriage and family formation.

This finding is consistent with, and confirmed by, a marginal effects estimator. By interacting the youth bulge term with a dichotomous variable for Muslim status, I am able to determine that the male youth bulge, while already being larger in the North than in the South, has a stronger predictive effect on protest than it does in the South. This is depicted below in Figure 7.

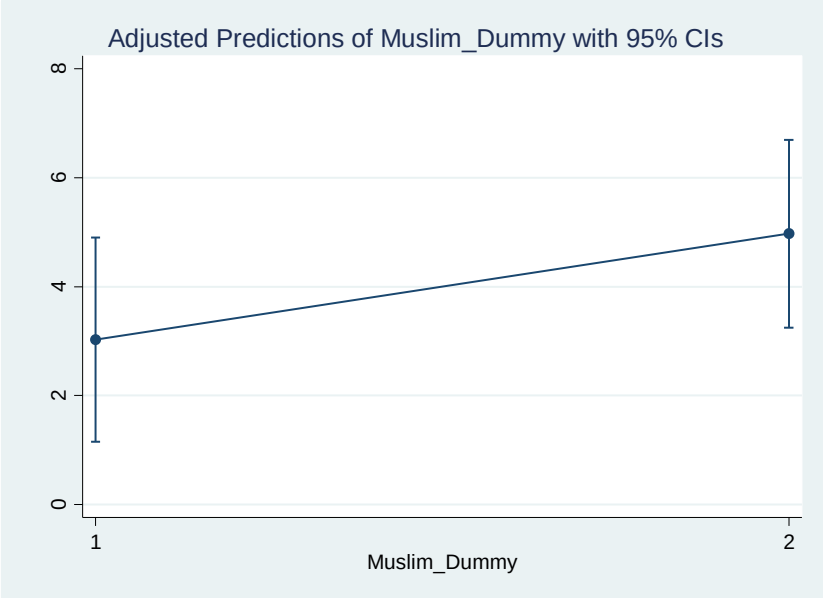

Fig. 7

III. Who is protesting, and why?

The identities, aims, and targets of Nigerian protesters and rioters are diverse. According to the dataset, those taking part in protests have come from every sector of society, including students, health workers, village women, labor unions, rebels, and many others. Nevertheless, it appears that young men do form a large portion, perhaps the majority, of those engaged in protests and demonstrations. Their targets have been varied: the government has been a focus of these events, but so have religious groups and large multinational oil and gas corporations. Some general trends can, however, be noted. In the early 1990s, the government was the principal

target of protests, while in the mid-2010s, the terrorist organization Boko Haram emerged as the main actor taking part in these events.

A large number of protests in Nigeria take the form of election-related violence. A report issued by Human Rights Watch after the 2011 presidential election confirms the deadly nature of this form of violence, as more than eight hundred people were left dead in the wake of this election. Due to the highly splintered nature of Nigerian politics, the North-South divide represents a highly salient electoral boundary. When Muhammadu Buhari, a Muslim Northerner, was defeated by Goodluck Jonathan, a Christian Southerner, interethnic conflict broke out throughout the country. This was exacerbated by allegations of voter fraud. Rioters were often encouraged by corrupt politicians, and the great majority of them were young men.

IV. Changes over time

As discussed previously, the evolution of Nigeria's youth bulge over the period from 1990 to 2015 mirrors that of other countries in the region. The persistence of a high birth rate and a low life expectancy keeps the population young. The youth bulge in the North is somewhat larger due to the presence of an even higher birth rate and an even lower life expectancy. However, the change of the youth bulge over time is similar to what is seen in the South: an increase in the percentage of the youth population in the mid-90s as a result of rising HIV/AIDS mortality rates is followed by a decrease as mortality rates decline. Birth rates overall also decline over this period.

Over the relevant timespan, the educational and employment opportunities of both Northerners and Southerners appear to increase, with a large gap maintained between the two regions. The practice of polygamy does not appear to change as greatly over time, according to

the Demographic and Health Survey, but it does seem to be on the decline. The North maintains a polygamy rate more than twice that of the South for the majority of the observed period.

Case Study: Tanzania

I. Background

Tanzania is a medium-sized country located on the Swahili Coast in the eastern portion of the African continent. It currently boasts a population of nearly 57 million people—a number that is expected to more than double by mid-century. Like much of Sub-Saharan Africa, Tanzania is a very young country, with a median age hovering around 17.4. While slightly lower than the median for the region, this figure places the Tanzanian population squarely within the norm of the African demographic experience. As such, the typical African population pyramid is observed in Figure 8: a broad base at the bottom that reaches a sharp point at the top. Much like in Nigeria, a very high birth rate of 5.3 births per woman keeps the country very young, and a low life expectancy minimizes the country's elderly population.

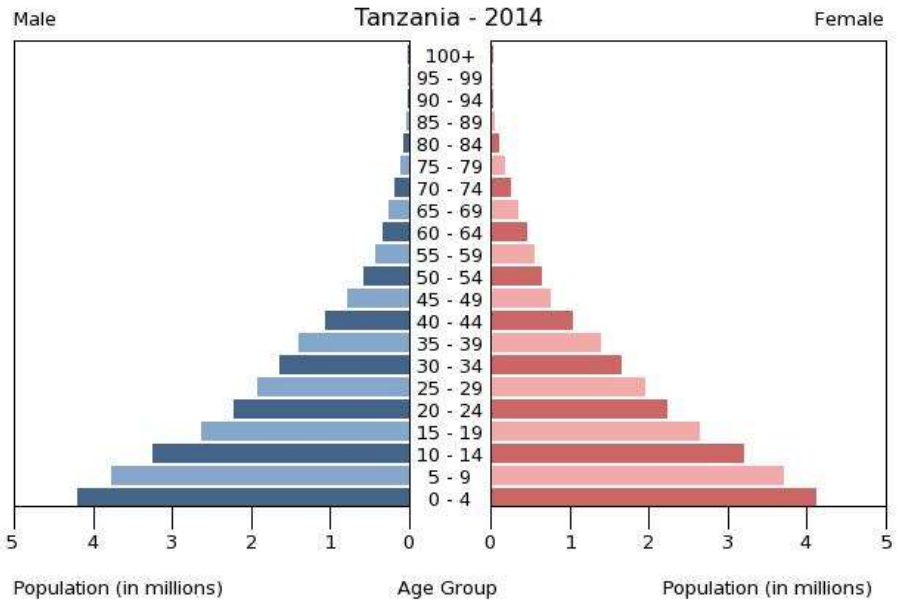

Fig. 8

The evolution of the country's youth bulge also mirrors that of the region as a whole, with an ever-increasing youth bulge prior to the turn of the millennium counteracted by a reversal in the trend after the year 2000. As discussed previously, this situation is likely deeply

rooted in the evolution of the HIV/AIDS epidemic on the continent. This change in the youth population is depicted in the graph in Figure 9.

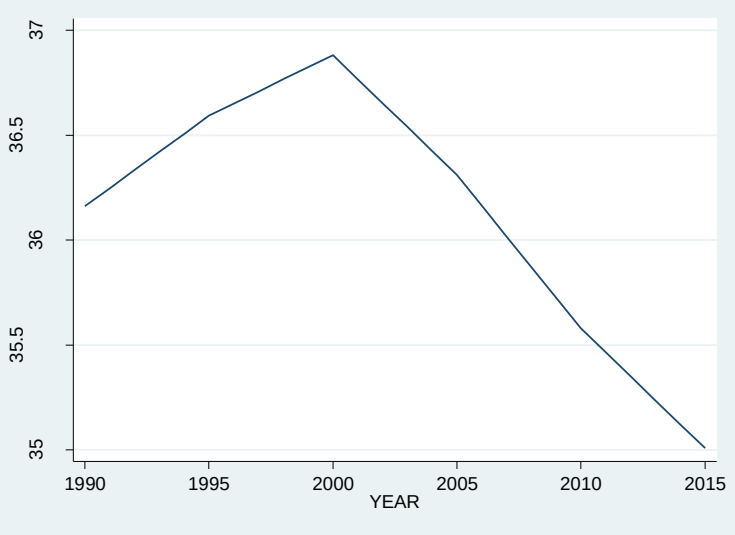

Fig. 9

In terms of protests, Tanzania has faced a moderate number of such events that again position the country squarely within the African norm and make it a worthwhile subject for further scholarship. The lack of a civil war or any large-scale conflict over the timespan under study is also helpful because it allows us to carefully look at the dependent variable without conflating it with other forms of civil conflict.

Another reason why Tanzania provides for an interesting case study surrounds the religious demographics of the population. Tanzanians on the whole tend to practice three main religions, and they do so in roughly equal numbers. These are Islam, Christianity, and African indigenous faiths. Islam arrived in present-day Tanzania in the centuries after the founding of the faith through transoceanic interactions between the Arabs and Persians of West Asia and the Swahili people of East Africa. The faith did not, however, penetrate toward the interior of the continent. As a result, the Muslims of Tanzania are today mainly concentrated on the Indian

Ocean coast as well as on the island of Zanzibar, where they account for approximately 99% of the population. Note the country and its make-up in Figure 10.

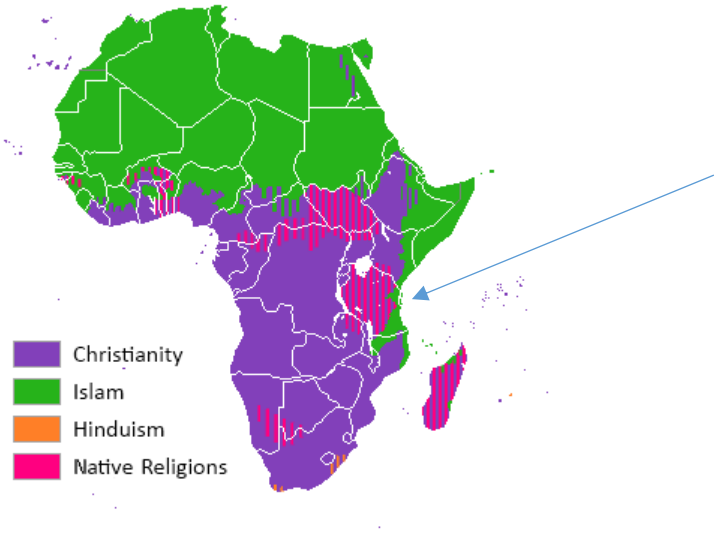

Fig. 10

Tanzania is part of the so-called "polygamy belt" that spreads across Africa from Senegal to the East, a region of the continent where polygamy is legal and widely practiced. According to Howland and Koenen (2014), approximately 25% of the marriages in the United Republic of Tanzania are polygamous and they are heavily concentrated in the Muslim-dominated regions of the country. In Zanzibar, a separate Islamic legal system works to enshrine polygynous unions into the local culture. The authors make the additional argument that in more modern areas of the country, especially in the city of Dar es Salaam, *de facto* polygamy tends to prevail as a result of changing cultural norms. While the marriage is technically not legally solemnized, the practical effect is the same: many men will find their own marriage prospects vastly reduced because some of their peers have taken multiple wives. Much like I argued in the previous section, the practice of polygamy is a potent and dangerous ingredient that, when mixed with the presence of a large youth population, can give rise to increased levels of protest activity.

II. Findings

Much like in the previous section, I collected sub-national population data for each of the thirty administrative divisions in the country, paired it with the relevant data from the SCAD dataset, and aggregated the set into two categories: Muslim and non-Muslim majority areas. I ran a regression, controlling for GDP per capita. I then conducted a time series regression using the total events dummy variable. The relevant findings from the econometric analysis are summarized in Table 9.

Table 9: Protest Events in Tanzania (Fixed Effects)

	Tanzania	Non-Muslim	Coast and Zanzibar
Percent Youth	0.041	0.026	0.060
	(2.09)*	(1.51)*	(3.19)**
GDP Per Capita	-0.000	-0.000	0.000
	(1.59)	(4.44)**	(0.75)
Sum FH Scores	-0.054	-0.061	-0.053
	(0.38)*	(0.43)	(0.24)*
Election	0.096	0.070	0.114
	(0.52)*	(0.95)	(0.87)
_cons	-0.069	-0.035	-0.108
	(0.80)	(0.93)	(1.46)
R^2	0.12	0.14	0.15
N	780	520	260

* $p<0.05$; ** $p<0.01$

The results are not surprising. All else being equal, a one-percentage point increase in a youth bulge is associated with a 6 percentage point increase in the likelihood of a protest event in the coastal areas and Zanzibar. This finding is statistically significant at the 1% level. The findings for the country as a whole and for the Christian and animist portions of the country are also significant, but only at the 5% level and at a lower magnitude.

I again looked at marginal effects, discovering that the youth bulge is quite a lot more predictive of protest in Muslim areas than in non-Muslim areas, as depicted in Figure 11 below.

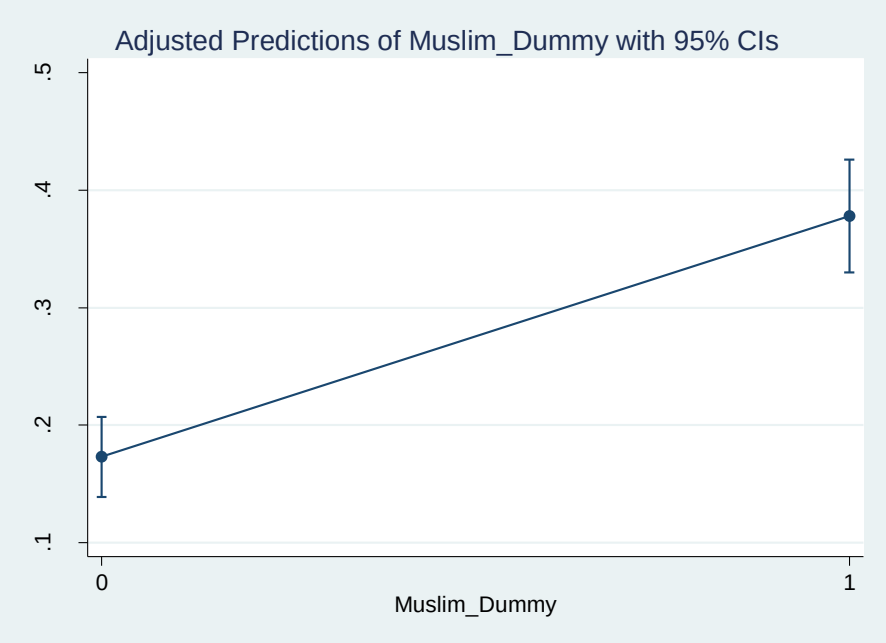

Fig. 11

In conjunction with the previous case study, this finding is to be expected. While the demographic nature of the youth bulge does not vary too much across the country, there are clear differences in the way that it impacts upon protest activity in Tanzania, as it affects Muslim-majority areas quite a bit more heavily. The men of these regions have fewer opportunities to form families, and thus fewer opportunities to be "moored," as *The Economist* put it.

III. Who is protesting, and why?

Tanzania has on the whole been privy to a smaller number of protests than Nigeria. Nevertheless, the identities of the protesters and their aims are just as varied. Young people, including students, again appear to play a strong role. Many of the events can be attributed to religious tensions or to inter-party political strife, much of it also being religiously-motivated.

What is perhaps most salient to this discussion is the political malaise surrounding the islands of Zanzibar, which Polish historian and reporter Ryszard Kapuściński called "a sad, dark star, a grim address, a cursed isle." Its beautiful weather and beaches notwithstanding, Zanzibar

politics can only be described as deeply troubled. According to international media reports at the time, the 2015 elections there were marred by questions of vote-rigging and intimidation. Deadly protests that followed were dominated by young men. The question of Zanzibar's status, with its separate governance structures and heavily Muslim population, weighs profoundly upon the shoulders of its leaders and people.

IV. Changes over time

The evolution of Tanzania's youth bulge is very similar to what is observed in other countries in Sub-Saharan Africa, including Nigeria. The Muslim-majority areas of the country do exhibit the same hump-shaped pattern that is seen elsewhere, although the youth bulge is larger in that part of the country than it is elsewhere.

Educational and employment opportunities appear to be more limited in the Muslim-dominated regions than in other parts of the country, however they are likely increasing throughout. The practice of polygamy does appear to be on the decline, but this trend is slow and unclear. Zanzibar maintains a much higher polygamy rate than the Tanzanian mainland.

Discussion

In this study, I have found that larger youth bulges *are* associated with an increased likelihood of protest in Sub-Saharan Africa. That fact alone is perhaps less interesting or important than the reasons for or implications of this reality.

As part of the main regression for this project, I conducted numerous subgroup analyses to determine a plausible explanation for the principle finding. I began by looking at colonial history, given the dominant view that the British preferred an indirect system of governance while the French opted for direct rule. This hunch did not bear out, and indeed many scholars have called into question whether or not European colonial rule varied greatly across the different powers. Jeffrey Herbst (2000) even argues that French rule was in all likelihood *less* direct than the British system, given a lower investment in infrastructure on their part. In 1963, British territories had, proportionally, more twice as many kilometers of road as the French territories.

In reevaluating my analysis, I was able to find that the Muslim-Christian divide is the most salient to the main question. In Muslim-majority countries, the size of the youth bulge was more predictive of protest activity than in countries without a majority of the population adhering to the Islamic faith. But why? Here, it is important to evaluate young men's opportunities in these religious contexts: can they become educated, seek and find employment, and start a family?

Here, I should enter a word of caution. The size of this effect is, on the whole, quite small. I do not present a case that African Muslims are somehow innately dangerous, but rather that certain institutions present within that community give way to a heightened likelihood of protest. A greater likelihood which is, like most findings in social science, rather small in scope.

It is also important to note, however, that I do not advance the notion that youth bulges matter only insofar as more young people, or even more young men, are present in a given country. Rather, the problem must be further conceptualized in two additional ways. Firstly, it is quite likely that the presence of a large population of young men may have a positive impact on other citizens' propensity to protest. As previously noted, Hart et al. (2004) found that young adults are significantly less likely to demonstrate "civic values" when coexisting in a society made up of more children than adults older than themselves. Clearly, a "peer effect" is at work here: perhaps, a larger proportion of young men demonstrating may shift the norms and make it more acceptable for others to protest as well. The notion of a peer effect is a deeply salient one, and recent research from Holden et al. (2017) even makes the claim that individual U.S. Supreme Court justices will rule in a more conservative or liberal manner given the presence of more right- or left-leaning justices on the Court. Variations of this notion have been found in other areas, and perhaps it holds relevance for societal protests as well.

It is also of great importance to evaluate the components that make a youth bulge predictive of protests. After all, some countries with larger youth bulges may have *fewer* protests on the whole. According to the literature, an opportunity-based approach is best suited to examining this issue. When individuals, particularly young men, have low opportunity costs, they are much likelier to feel that they have less to lose. That is, without an education, job, and family, they may feel that demonstrating may be a worthwhile avenue to pursue. Especially when combined with considerations of male alienation, a potent brew has occasion to congeal.

So how then do the Muslim-dominated portions of Sub-Saharan Africa stack up against their Christian and animist counterparts in terms of educational and employment opportunities? In terms of education, the answer is simple: not well. According to the Pew Research Center,

65% of Muslims in Sub-Saharan Africa have no formal schooling while the same is true for only 30% of Christians. Numerous scholars have tried to explain this wide chasm. Dahir (2017) makes the argument that a lack of missionary or state schools in Muslim areas is the main reason for this phenomenon. Colonial governments felt that there was already a system of Islamic education in place and that were would consequently be low demand for a Western-style education. Izama (2013) makes a more localized argument that focuses on Islam's relative lack of hierarchy and differences in the way it has been practiced across space and time.

Whatever the reason, the gap in education is real and large. Employment, on the other hand, is a more difficult measure to evaluate. Many, if not most, of Africa's workers labor in the informal sector; consequently, it is difficult to ascertain a reasonably accurate estimate for this variable. Nevertheless, it is clear that foreign investment is focused heavily on Christian areas. This includes countries like South Africa and Kenya as opposed to Niger and Mali, but it also consists of Southern as opposed to Northern Nigeria. Conflicts in these areas, from Boko Haram's attacks in Northern Nigeria to continuing unrest in the Sahel, threaten private property and discourage investment, thereby perpetuating a vicious cycle of low opportunity and violence that feeds off of itself in what Collier (2007) calls a "conflict trap."

Perhaps an even more important consideration is the practice of polygamy throughout the Muslim parts of Sub-Saharan Africa. Much like the preference for sons and sex-selective abortions of East Asia, the practice of polygyny places young men, especially the most disadvantaged among them, into a very difficult marriage market. This provides these men with precisely the low opportunity costs that tend to be predictive of conflict. Indeed, Fenske (2013) finds that the practice of polygamy is deeply intertwined with low educational investment and

also has historical roots that tie to past exposure to the slave trade. This creates a positive feedback loop of low opportunity of the type noted previously.

Data from the Demographic and Health Survey confirms that polygamy is a widespread practice throughout the Muslim-dominated parts of the African continent. As can be seen in the map depicted in Figure 12 below, the nations of West Africa and the Sahel have the highest rates of polygamy in Sub-Saharan Africa, here measured as the proportion of married women who have at least one co-wife.

Fig. 12

I collected data from the DHS on the changing polygamy rate in Sub-Saharan African countries. I looked at marginal effects in much the same way that I did previously in this study. Figure 13 depicts the finding: at polygamy level "1", fewer than 10% of married women have two or more co-wives. At "2", between 10% and 20% do. Finally, at "3", more than 20% of married women have two or more co-wives; this represents a rather small group of data points. The finding here is quite clear: the youth bulge is more predictive of protest activity in places

where the practice of polygamy is more widespread. As mentioned previously, this is to be expected given the tightened marriage markets that polygyny creates for young men.

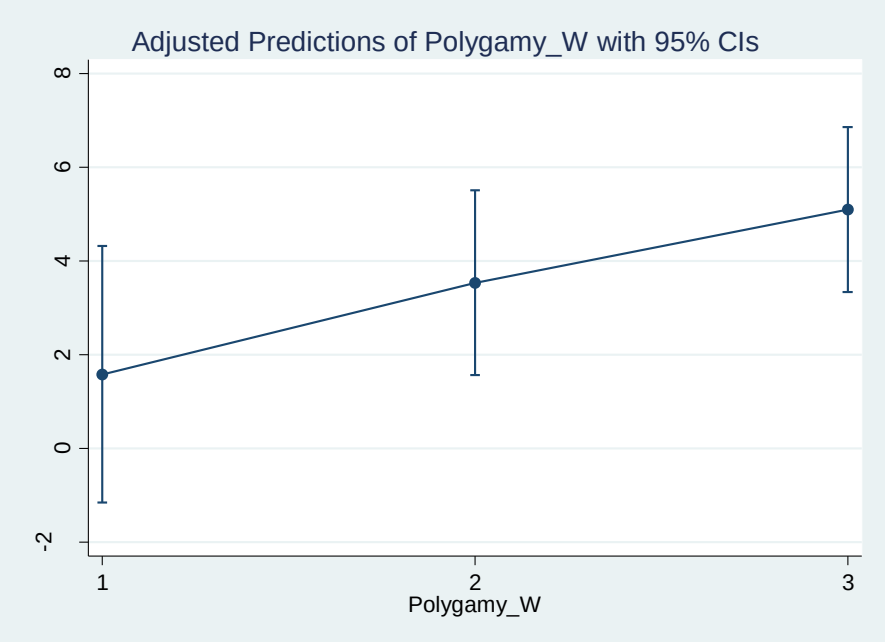

Fig. 13

As discussed previously, the type of protest activity discussed here is not the type that we would normally associate with high-minded civic engagement. Much of it is violent and deadly. Indeed, I found a much stronger effect for violent riots than I did for demonstrations. Therefore, it would be prudent to consider possible policy implications that would help alleviate this reality. Improved provision of family planning services through increased funding of the UN Population Fund and other agencies would aid in reducing the youth bulge, although I would argue that governments should focus less on this half of the equation and more on increasing the opportunity cost of protest. They should especially not emphasize draconian methods of culling the youth population.

First, governments should spend more on education, especially in the Muslim-dominated areas that have a shakier history with state education. But they ought to be careful not to do this

in a vacuum: Urdal (2004) emphasizes that education without employment prospects is more strongly associated with protests than no education at all. Hence, it is important to create a business-friendly atmosphere where foreign investment and trade are encouraged and private property rights are respected. Secondly, the practice of polygamy should be curtailed, as best as possible, through cultural and public education initiatives. Eventually, a legal ban should be established.

This paper makes a few contributions of note: it examines the youth bulge—conflict question in the context of Sub-Saharan Africa and looks at demonstrations and riots as opposed to civil war. In this context, it finds a predictive effect of large youth populations on protest. I also use this project to advance the notion that this effect can vary widely across time and space as the opportunity costs of protesting wax and wane. Nevertheless, there are numerous areas where future contributions can be made.

One such possible area of future study concerns the acquisition of a deeper understanding of the ways in which political psychology affects protest. My study and those of others have been mainly group-focused, and it would be instructive to better comprehend individual motivations through a psychological perspective. A second area of future study concerns the role of technology. Across the Western world today, antisocial behavior is rapidly declining, and it is likely that the ubiquitous presence of smartphones, social media, and the Internet has had a major role to play in this shift. Future research should examine whether technology is playing a similar role in the African protest context. A third area of study would be to compare civil wars and violent riots, as the effect I found was significant for violent riots but not demonstrations, and violent riots share perhaps share more in common with civil wars. Finally, the peer effect of protesting young men on older adults should be interrogated.

Conclusion

In this paper, I find a small, but significant effect of the youth bulge on protest activity in Sub-Saharan Africa. The study posits that certain societal conditions found in greatest degree in Muslim-majority countries, such as few educational and employment opportunities and the prevalence of polygamous marriages, tends to strengthen the relationship by offering young men few alternatives to conflict. I look at two countries, Nigeria and Tanzania, which have large, but geographically distinct, populations of Muslims and non-Muslims. State-level data from these countries also support the notion that low opportunity costs increase the likelihood of protest. Policymakers should not make ill-fated attempts to change population profiles, but rather to offer young men in their societies opportunities to form families and find jobs.

References

"ACLED Database." *Armed Conflict & Location Data Project*. N.p., n.d. Web. 09 Apr. 2017.

"AIDSinfo | UNAIDS." *AIDSinfo*. UNAIDS, n.d. Web. 09 Apr. 2017.

Blattman, Christopher, and Jeannie Annan. "The consequences of child soldiering." *The review of economics and statistics* 92.4 (2010): 882-898.

Blattman, Christopher, and Edward Miguel. "Civil war." *Journal of Economic literature* 48.1 (2010): 3-57.

Braungart, Richard G., and Margaret M. Braungart. "Life-course and generational politics." *Annual Review of Sociology* 12.1 (1986): 205-231.

Branch, Adam, and Zachariah Cherian Mampilly. *Africa Uprising: Popular Protest and Political Change*. London: Zed , in Association with International African Institute, Royal African Society, World Peace Foundation, 2015. Print.

Brett, Rachel, and Irma Specht. *Young soldiers: Why they choose to fight*. International Labour Organization, 2004.

Cederman, Lars-Erik, Nils B. Weidmann, and Kristian Skrede Gleditsch. "Horizontal inequalities and ethnonationalist civil war: A global comparison." *American Political Science Review* 105.03 (2011): 478-495.

Choucri, Nazli. "Population dynamics and international violence." (1974).

Collier, Paul. *Economic causes of civil conflict and their implications for policy*. Washington, DC: World Bank, 2000.

Collier, Paul, and Anke Hoeffler. *On the duration of civil war*. Vol. 2681. World Bank Publications, 2001.

Collier, Paul, and Anke Hoeffler. "Greed and grievance in civil war." *Oxford economic*

papers 56.4 (2004): 563-595.

Cramer, Christopher. *Unemployment and participation in violence*. Washington, DC: World Bank, 2010.

Dahir, Abdi Latif. "The Biggest Divide between African Muslims and Christians Isn't Their Religion." *Quartz*. Quartz, 10 Jan. 2017. Web. 09 Apr. 2017.

"Data for National Development." *National Population Commission*. Government of Nigeria, n.d. Web. 09 Apr. 2017.

"The DHS Program - Quality Information to Plan, Monitor and Improve Population, Health, and Nutrition Programs." *The DHS Program*. USAID, n.d. Web. 09 Apr. 2017.

"Explore Encyclopedia Britannica." *Encyclopædia Britannica*. Encyclopædia Britannica, Inc., n.d. Web. 09 Apr. 2017.

Fearon, James D., and David D. Laitin. "Ethnicity, insurgency, and civil war." *American political science review* 97.01 (2003): 75-90.

Fenske, James. "African Polygamy: Past and Present | VOX, CEPR's Policy Portal." *VOX*. CEPR's Policy Portal, 09 Nov. 2013. Web. 09 Apr. 2017.

"Freedom House." *Freedom House*. N.p., n.d. Web. 09 Apr. 2017.

"GDP per Capita (current US$) Data." *World Bank GDP per Capita*. World Bank, n.d. Web. 09 Apr. 2017.

Geiger, Abigail. "Gap between Muslims and Christians with No Formal Schooling Is Large in Much of Sub-Saharan Africa." *Pew Research Center*. N.p., 13 Dec. 2016. Web. 09 Apr. 2017.

Geiger, Abigail. "Gap between Muslims and Christians with No Formal Schooling Is Large in Much of Sub-Saharan Africa." *Pew Research Center*. Pew Research Center, 13 Dec. 2016. Web. 09 Apr. 2017.

Gurr, Ted R. *Why Men Rebel*. Princeton, N.J: Published for the Center of International Studies, Princeton University [by] Princeton University Press, 1970. Print.

Hart, Daniel, et al. "Youth bulges in communities the effects of age structure on adolescent civic knowledge and civic participation." *Psychological Science* 15.9 (2004): 591-597.

Hegre, Håvard. "Toward a democratic civil peace? Democracy, political change, and civil war, 1816–1992." *American Political Science Association*. Vol. 95. No. 01. Cambridge University Press, 2001.

Hendrix, Cullen, Stephan Haggard, and Beatriz Magaloni. "Grievance and opportunity: Food prices, political regime, and protest." *presentation at the International Studies Association Convention, New York (August, 2009)*. 2009.

Herbst, Jeffrey Ira. *States and Power in Africa*. Princeton, New Jersey: Princeton UP, 2000. Print.

Holden, Richard and Keane, Michael and Lilley, Matthew, Peer Effects on the United States Supreme Court (February 3, 2017). Available at SSRN: https://ssrn.com/abstract=2916394

Honwana, Alcinda. "Youth, waithood, and protest movements in Africa." *African Dynamics in a Multipolar World: 5th European Conference on African Studies—Conference Proceedings*. Centro de Estudos Internacionais do Instituto Universitário de Lisboa (ISCTE-IUL), 2014.

Howland, Rachel J., and Ashley Koenen. "Divorce and Polygamy in Tanzania." (2014).

Huntington, Samuel P. *The Clash of Civilizations and the Remaking of World Order*. New York: Simon & Schuster, 2011. Print.

Izama, Melina Platas. "Muslim Education in Sub-Saharan Africa." *Kampala: AALIMS Graduate Workshop*. 2013.

Kalemli-Ozcan, Sebnem, and Belgi Turan. "HIV and fertility revisited." *Journal of Development Economics* 96.1 (2011): 61-65.

Lee, Ronald. "The demographic transition: three centuries of fundamental change." *The journal of economic perspectives* 17.4 (2003): 167-190.

Lia, Brynjar. *Globalisation and the future of terrorism: Patterns and predictions*. Routledge, 2005.

Murphy, Caryle. "Saudi Arabia's Youth and the Kingdom's Future." *Washington: Woodrow Wilson International Center for Scholars*. 2011.

Malthus, Thomas. "An Essay on the Principle of Population, as it affects the Future of Society with Remarks on the Speculations of Mr. Godwin, M. Condorcet, and Other Writers. London, Printed for J. Johnson, In St. Paul's Church-Yard, 1798." *St. Paul's Church-yard, London* (1798).

"National Bureau of Statistics | Statistics for Development." *Statistics for Development*. National Bureau of Statistics, n.d. Web. 09 Apr. 2017.

Neier, Aryeh. "A Country Unmasked by Alex Boraine Unspeakable Truths: Confronting State Terror and Atrocity by Priscilla B. Hayner Stay the Hand of Vengeance: The Politics of War Crimes Tribunals by Gary Jonathan Bass Crimes Against Humanity: The Struggle for Global Justice by Geoffrey Robertson Kosovo Report a report from the Independent Commission on Kosovo For Humanity: Reflections of a War Crimes Investigator by

Richard J. Goldstone." *New York Review of Books* 48.4 (2001): 31-34.

"Nigeria: Post-Election Violence Killed 800." *Human Rights Watch*. N.p., 07 June 2011. Web. 09 Apr. 2017.

"Of Men and Mayhem." *The Economist*. The Economist Newspaper, 23 Jan. 2016. Web. 09 Apr. 2017.

Resnick, Danielle, and Daniela Casale. *The political participation of Africa's youth: Turnout, partisanship, and protest*. No. 2011, 56. Working paper//World Institute for Development Economics Research, 2011.

Ridley, Matt. *The Evolution of Everything: How Small Changes Transform Our World*. London: 4th Estate, 2016. Print.

Salehyan, Idean, Cullen S. Hendrix, Jesse Hamner, Christina Case, Christopher Linebarger, Emily Stull, and Jennifer Williams. "Social conflict in Africa: A new database." *International Interactions* 38, no. 4 (2012): 503-511.

"Tanzania's Elections Go off Well, except on Zanzibar." *The Economist*. The Economist Newspaper, 30 Oct. 2015. Web. 09 Apr. 2017.

"UCDP Datasets." *Department of Peace and Conflict Research*. Uppsala University, n.d. Web. 09 Apr. 2017.

Urdal, Henrik. "A clash of generations? Youth bulges and political violence." *International studies quarterly* 50.3 (2006): 607-629.

Urdal, Henrik. "The devil in the demographics: the effect of youth bulges on domestic armed conflict, 1950-2000." *Social Development Papers: Conflict and Reconstruction Paper* 14 (2004).

"World Population Prospects - Population Division." *United Nations Population Division*. United Nations, n.d. Web. 09 Apr. 2017.

Zakaria, Fareed. "The Politics Of Rage: Why Do They Hate Us?" *Newsweek*. Newsweek, 13 Mar. 2010. Web. 09 Apr. 2017.